

# Experiential mappings

## approaching the landscape through atmosphere

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### **Abstract**

This paper argues that the opening up of landscape analysis to variables that exceed the 'tangible' or traditionally 'parameterized' values provides alternative access to the specificities of the landscape. In particular, the concept of 'atmosphere' as a particular dimension of the embodied experience, is proposed as an operative vehicle for the enrichment of the cartographic interpretation of the landscape. By placing the emphasis on atmosphere in terms of its causes, rather than its effects on our emotional sensibility, cartography enhances the identification of the particular by interpreting the specific manner that the properties of the landscape configure the experience. The paper is structured in two parts. The first part is a theoretical inquiry of the inter-subjective patterns of perception that define 'atmosphere', with the objective to bring the concept of atmosphere into the professional practice and discourse of landscape architecture through the agency of mapping. In the second part, the proposed approach to atmosphere is tested through a series of mappings of an agrarian, ordinary landscape, situated in Catalonia, Spain. The cartographic exercises point towards the identification of spatial patterns that potentially function as activators of atmospheres, as indicators for the presence of particular modes of landscape experience.

### **Keywords**

landscape analysis; embodied experience; atmosphere; mappings

# Introduction

The identification and understanding of particular places, central to the understanding of landscape, are subject to individual perception, meaning and interpretation. However, in the usual cartography which is needed for an integrated approach to landscape and landscape character, objective data and scientific rigour take the lead, which seems to exclude an experiential reading of the landscape. So the following research question arises: Can embodied experience serve as an operative vehicle for the enrichment of the cartographic interpretation of the landscape? Furthermore, how effective can this approach be for the identification of the particular?

The European Landscape Convention (Florence, 2000) has marked a turning point for the acknowledgement of the landscape as a shared resource to be preserved and managed. Its application in the Catalanian Territory, coordinated by the Landscape Observatory, resulted in the development of the Landscape Catalogues, conceived as instruments for the introduction of landscape objectives and guidelines into spatial planning. The elaboration of the catalogues has been based on a fundamental conceptual, methodological and procedural outline as synthesized in the Prototype Landscape Catalogue, redacted by the Landscape Observatory. In the prototype, landscape is defined as an area as perceived by people, the character of which is the result of the interaction of natural and/or human factors that make one landscape differ from another. The interpretation of the landscape character is based on the cartographic identification and characterization of a vast series of "values", varying from the ecological, patrimonial, productive and aesthetic qualities of the territory, finally distilled in the delimitation of landscape units of a distinctive character, and the definition of a series of objectives that should inform the decisions made in the corresponding Partial Territorial Plan.

This process, clearly pointing towards an integrated approach to landscape, nonetheless has largely submitted the cartographic identification of value to three of the basic criteria of cartography: geo-localization, parameterization, and measurement, in a still conventional understanding of the cartographic product, as evidence of a "scientific" process whose objectivity cannot be questioned. This urge for scientific rigor, assisted by the use of Geographical Information Systems, transforms these criteria into constraints when it comes to the identification of "other" values, generically defined as the "intangible": Concepts like sense of place, genius loci, embodied experience, ambiance, aura or mood, considered to belong to the subjective perception rather than to the "objective" structure of the environment, remain unapproachable through the conventional [1] methodologies of cartographic parameterization and measurement, but undoubtedly central to the very same definition of "landscape".

Among these concepts, this paper focuses on embodied experience for its intrinsic duality of oscillating constantly between the physical/biological dimensions of space and body. The effects of this interaction nonetheless have been largely looked at and investigated at a specific scale and from a specific point of view: descriptions focus on human scale environments while interpretations or representations opt for the point of view of the perceiving subject.

The arguments developed in this paper support the position that the "submission" of the embodied to cartography, and thus to the laws of a two-dimensional representation and to a scale that differs from that of a downscale environment, activates the research on the capacity of maps to interpret the field of experience of the landscape that exists between body and space. Among the effects of this process lies an alternative decoding of the specificities of the landscape, driving cartography towards a more grounded, experiential interpretation of the landscape, revealing special qualities as interpreted by the effect they have on the embodied experience.

## Atmosphere as a filter

The subject is certainly immensely complex; nonetheless, this paper focuses on a particular dimension of the embodied, filtered through the concept of atmosphere. In this paper, atmosphere is addressed through one of its more mediated meanings, one that points to a resonance between the properties of environment and patterns of feeling or emotion, also commonly referred to as a “first impression”.

## Why atmosphere?

Initially, the concept of atmosphere is suggestive for its long-term relationship with the concept of character, both forming expressions of the “spirit” of place, or *genius loci* [2]. (Norberg-Schulz, 1980). But, most importantly, this research addresses atmosphere as an exemplification of the potentialities arising when the dichotomy between body and environment is exceeded, when the analysis is not focusing either on the objective properties of the environment, seen as the “other”, the “exterior” objective world, nor on its interpretations by the perceiving subject, but precisely on the in-between field of experience.

## From theory to practice

Existing literature on atmosphere comes mainly from the field of architecture, with perhaps the most known examples of Norberg Schulz (1980) and Peter Zumthor (2006), and from aesthetics, more recently represented by Gernot Böhme (1993, 2003, 2013) and Juhani Pallasmaa (2014), among others. The majority look at atmosphere through an essentially phenomenological perspective, defining some of its principal qualities: unfinished, dynamic and affective (Andreson 2009). Nonetheless, through this body of knowledge, a considerable gap could be detected when it came to the definition of atmosphere in terms of its causes and at a scale that differs to that of a downscale, designed environment. Spatial properties, such as materiality, light and sound, as proposed by Böhme (2013) and Zumthor (2006) provide a “stage” for intense atmospheric “effects” to unfold into a controlled, designed environment. Such properties, unquestionably central to the discussion of atmosphere, could be potentially exported to differentiated scales of work and partially to open, non-designed environments. In any case, the objective would be to export their representation to cartography without impoverishing their interpretation and, most importantly, enmesh them with a structural rethinking of the analysis of the complex underlying orders that configure landscape.

Beyond recovering all the definitions that the word has acquired in the literature of architecture, aesthetics or art, this research centers on defining atmosphere as spatially situated in order to enhance its cartographical interpretation in terms of its causes and not of its effects on our emotional sensibility. Although existing theoretical approaches to atmosphere do not immediately provide a clear point of departure for this process, they do offer us some significant clues on the essence of the phenomenon, since all seem to converge at the following common point: Atmosphere, as first impression, or even as a kind of prediction, positions the body within a field of sense and experience prior to the retrieval of intellectually sustained descriptions.

This quality of atmosphere, as an instinctive and immediate reaction to space, permits its linkage with the inter-subjective patterns of perception that define this precise moment of perception, as proposed by the embodied perspective to perception and cognition: These “patterns” are localized precisely between body and mind, body and environment, perception and action, in terms of a dynamic mutual influence. This process leads to an emergence of “knowledge through the primary agent’s bodily engagement with the environment, rather than being simply determined by and dependent upon either pre-existent situations or personal construals”. (Wilson, Robert A. and Foglia, Lucia. 2016)

Inspired by and adapting references from the embodied perspective of cognition, we approach some of the dimensions of intelligibility of the environment that atmosphere brings together: Atmosphere as a first impression and prediction finds its resonance with the theory of affordances, as defined by J.J. Gibson (1989) and further explored by the situated perspective on cognition. Affordances, as defined by Gibson, refer to the offers, consistent in opportunities of interaction that the objects present in the environment in relation to the sensorimotor capacities of each species. The value and meanings of the affordances of the environment can be directly perceived; they are intrinsically part of the potential of objects themselves and are not constructed from the observer’s momentary needs or intentions.

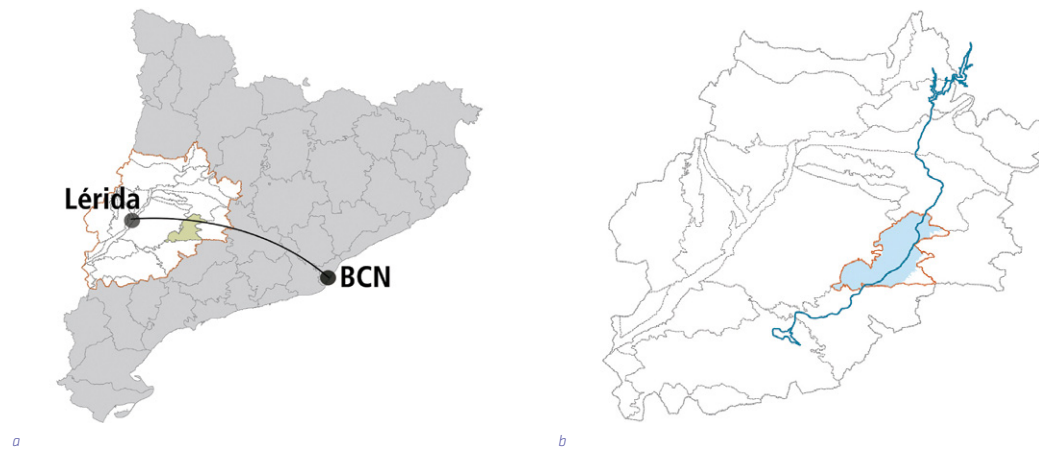
The work of Lakoff and Johnson (1999) metaphorically extends and projects the primary embodied experience towards the configuration of abstract/symbolic meaning. Such metaphorical extensions and projections are widely shared; they function as fundamental metaphors with which we think, rather than as metaphors we consciously construct. Drawing from Lakoff and Johnson, the properties of landscape could be interpreted as spatial patterns of containment, according to the precise manner through which they support our presence and “contain” our body, extending or projecting the embodied towards the metaphorical interpretations of the experience.

The work of Kaplan (1979) also permits the extension of the interpretation of atmosphere based on an automatic interpretation of these affordances as potentialities of action to the interpretation of structural patterns of information, such as complexity, mystery, coherence and legibility. These patterns, according to Kaplan, are linked to basic human purposes: making sense and involvement (Kaplan 1979). “While making sense refers to the concern to comprehend... involvement refers to the concern to figure out, to learn, to be stimulated. Nonetheless, knowing that an environment makes sense tells one nothing about whether it will be involving or not.” (Kaplan 1979:243). When people view a landscape, they are making a judgment, however intuitive and unconscious this process may be. This judgment concerns the sorts of experiences they would have, the ease of locomotion, of moving, of exploring in the environment they are viewing (Kaplan 1979). The perception of the environment implies its evaluation, and evaluation, in turn, elicits emotions and consequent tendencies of action, tendencies either to continue with what one is doing, or to withdraw, as the work of Antonio Damasio (1994) proposes. Affordances, spatial patterns of containment and complexity are thus proposed as basic activators of atmosphere.

The usefulness of distinguishing these dimensions is this: insofar as the word atmosphere denotes an immediate and intuitive response to the environment, it is important to ask how far its cartographic interpretations can work, not at a level of a reflexive understanding of atmosphere in terms of this response, but essentially in terms of its causes.

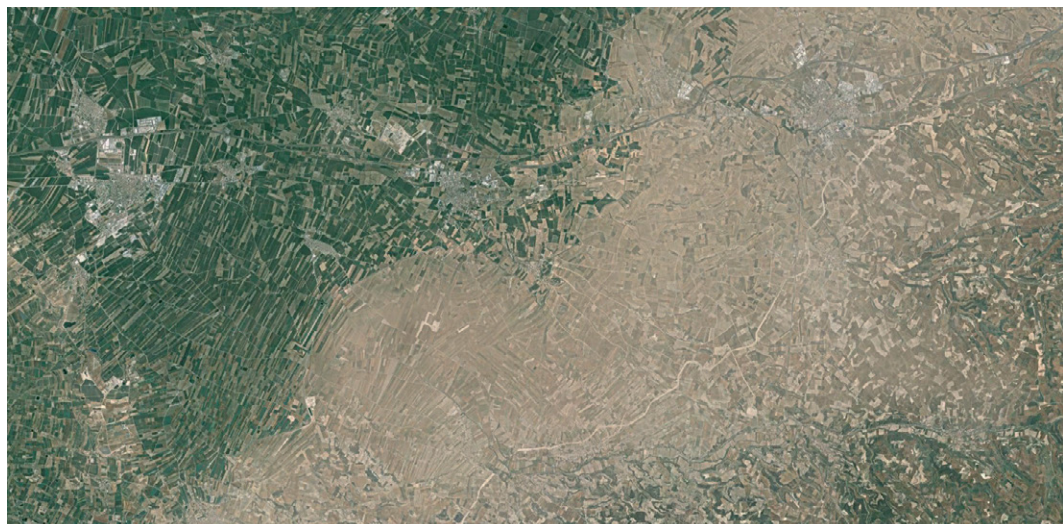


## On-site testing



**FIGURE 1** Situation of the landscape unit Secano de Belianes i de Ondara in the region of Lérida. Infrastructure corridor: Lérida-BCN and new irrigation channel crossing the landscape unit.

The site corresponds to the landscape unit of Secano de Belianes i de Ondara, as delimited in the Landscape Catalogue of Lérida region [3], an essentially plain [4], agrarian, ordinary landscape. Situated (Fig. 1) along a major infrastructure corridor connecting the city of Lerida with Barcelona and the Paris-Madrid TGV line, and in the midst of one of the most intensive productive agricultural landscapes of Catalonia, the area is subject to a radical change due to the implementation of the new irrigation channel of Segarra Garrigues. This channel potentiates the transformation of this dry landscape to an irrigated one with obvious consequences both to its function and to its image: a long, extended platform, covered by a seemingly uniform but complex geometric agricultural pattern (Fig.2), engages the body through a strong sense of “openness”, only to be disrupted by rare details that capture the attention and, in a sense, deautomatize the perception, the majority of such details coming in the form of sparse topographical accentuations, and vegetated margins along the plot limits and the irrigation canals.



**FIGURE 2** Agricultural patterns covering the plain of the landscape unit. (Map data: Google, Institut Cartogràfic de Catalunya)

The deciphering of the underlying orders that form the particular character of this ordinary agricultural Mediterranean plain could be effectively reduced to the observation of a few common variables, such as those included in the planimetric and the topographic [5]. Nonetheless, as it will be argued, their cartographical interpretation acquires an extended meaning when concretized through their incision in the embodied experience, assigning value to landscape properties typically obviated at this scale of work.

## Cartographic interpretations of the basic activators of atmosphere

The approach to the activators of atmosphere, in terms of both affordances and spatial patterns of containment, begins with the morphological study of the topography. A generic classification of the slopes, which, at least in the field of spatial planning, generically includes the plain in a percentage of 0-5% (Fig. 3), which would represent the whole extension of the site as uniform. Nonetheless, a more meticulous analysis of the topography reveals a series of minimum slope changes, oscillating between 1.5 -3.5 % and corresponding to a series of topographic linear elements of variable thickness (Fig. 4). These morphological boundaries form perhaps the most significant element of concreteness of this rural landscape (Fig. 5), both in terms of their effects in the geometrical configuration of the agricultural patterns and in the visual experience as the visibility studies reveal: These limits, although slight in relation to the scale of landscape but significant in relation to the scale of the human body, define the visual structure of this landscape and the degrees of visual exposure throughout this landscape (Fig. 7).

Through a similar approach, the analysis of the morphological structure of the plain also acquires an alternative meaning. Based on the reclassification of the habitats according to their potential visual and physical permeability, the agricultural plain is metaphorically interpreted in terms of rooms of a variable potential "domestic" use. Each one of these rooms offers a highly differentiated experience, horizontal fields occupied by rain-fed or irrigated herbaceous rooms, accessible grids configured through the olive and almond trees planted in the form of a matrix, as well as "corridors" formed between the linear structures that sustain the vineyards and the irrigated fruit crops (Fig. 6).

In this predominantly plain landscape, the definition of the limits of these rooms, either flat - as those covered by herbaceous vegetation - or three dimensional (Fig. 8), becomes highly important in the configuration of the experience, directly influencing the sense of evolvment of the landscape. These limits (Fig. 9), in the form of vegetated margins, topographic boundaries and dry stone walls, were manually mapped based on the 5000 aerial orthophotos, and classified according to their height and opaqueness as visual and physical barriers (Fig. 10).

Through observation, the above cartographic exercises permit, by means of their differentiated materiality and form, the understanding of the logic of the spatial patterns of containment of this landscape, according to the quality of the limits that define them: In the macro-scale, longitudinal transitional limits are traced between differentiated experiences, while, at the scale of immediate perception, vegetated margins, walls and slight changes of slope retain their perceptual attention. The attribution of value to these limits is analogous to the predominant openness of the plain (Fig.11). Functioning as lineal nodes of attraction of the gaze, these elements activate the perceptual attention in this flat landscape, locating the body in particular experiential niches.



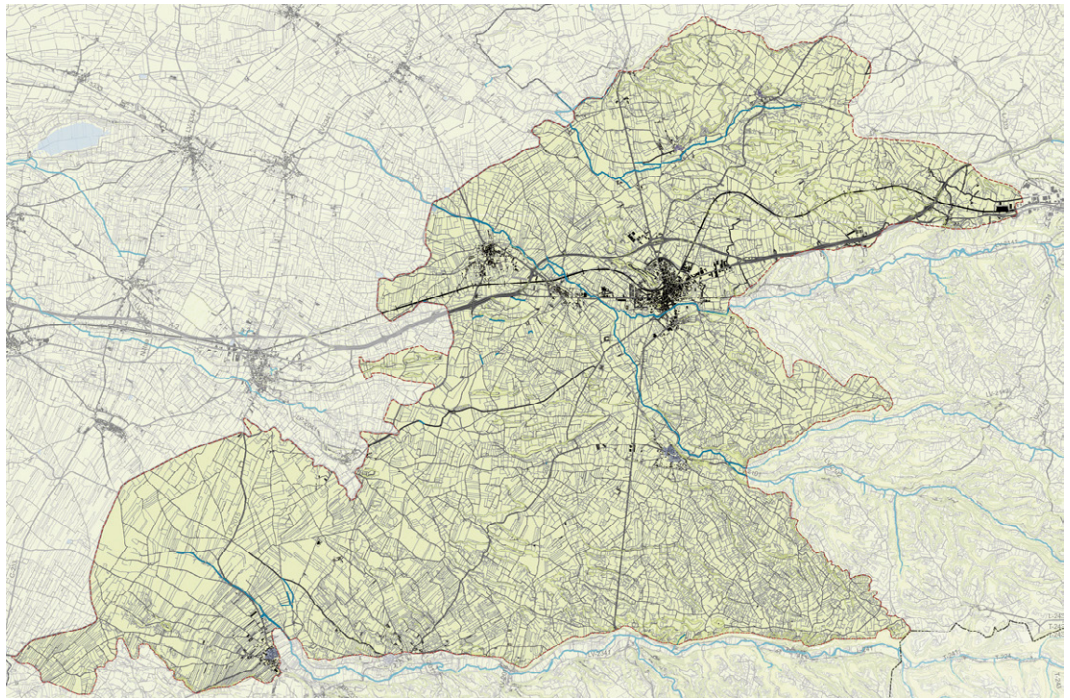


FIGURE 3 Calculation of slopes from 0 to 5%



FIGURE 4 Calculation of slopes from 1.5 to 3.5%



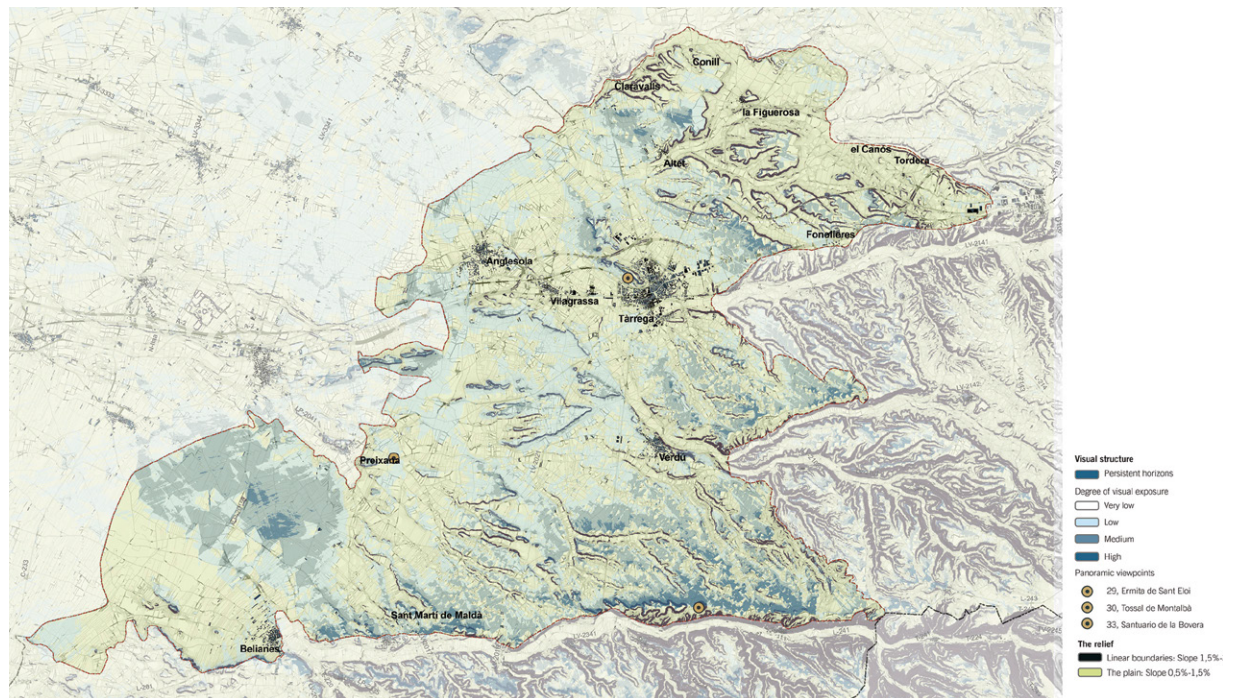


FIGURE 5 Examples of morphological boundaries formed by slight changes of slope. (Map data: Google, Institut Cartogràfic de Catalunya)



FIGURE 6 Aerial view of different rooms: olive trees along herbaceous horizontal fields. (Map data: Google, Institut Cartogràfic de Catalunya)





**FIGURE 7** Visibility study showcasing the importance of the morphological boundaries in the perception of the landscape. (The most visible areas are shown in blue ).

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This same structural flatness also enhances the perception of the multiple geometrical orders that draw the specificity of this landscape through a vast spectrum of lineal elements, such as plots, canals, and paths, forming relational patterns of variable orientations and densities throughout the territory. It is this particular syntax that it is related to the perceived complexity (Fig. 13) of the site, primarily configured through the interrelated networks of the irrigation channels and paths, which organizes the plain of agriculture. This latter is decoded into differentiated agricultural patterns, revealed through the predominating orientation of the plots, others more sharp and legible while others seemingly more chaotic, nonetheless all adding density to the geometrical syntax of the site, also enriched by the lineal elements of topography, the dry stone walls, the vegetated margins and the three dimensional rooms of agriculture. This particular syntax is perceived not only in the form of discrete elements but also through the logic of their spatial distribution, revealing differentiated tendencies of compactness of the landscape grain (Fig. 12).

These grains help detect distinct morphological niches through this landscape, the sharpness of which also depends on their mutual influence, visual or physical, with other elements with which they potentially share a tense relationship (agriculture elements versus major road infrastructures or industrial sites) or a complementing character (paths, plots, small villages). These density mappings could be further interpreted thus as indicators for the degree of legibility and coherence of the landscape, an understanding that becomes more concrete through the observation of the previous mappings referring to the geometrical syntax of the site (Fig. 13).



FIGURE 8 Flat and three dimensional rooms.



FIGURE 9 Topographical boundaries, dry stone walls and vegetated margins.



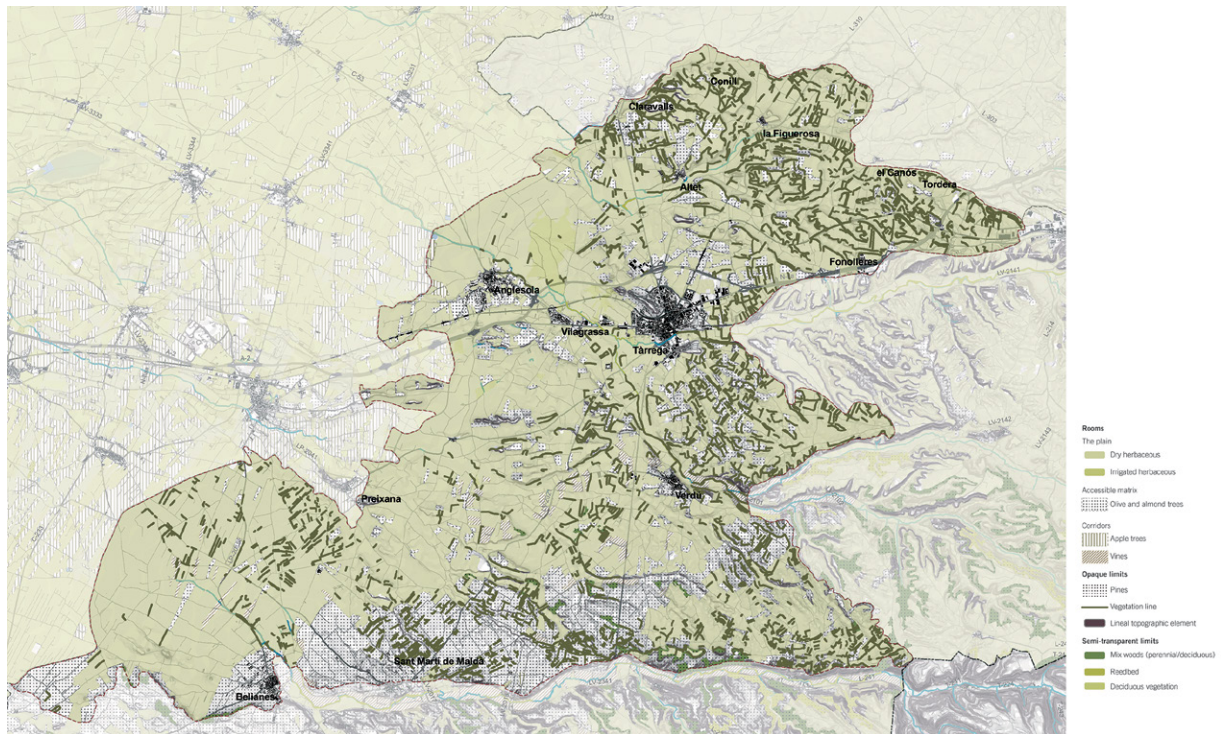


FIGURE 10 Cartographical interpretation of rooms and limits.

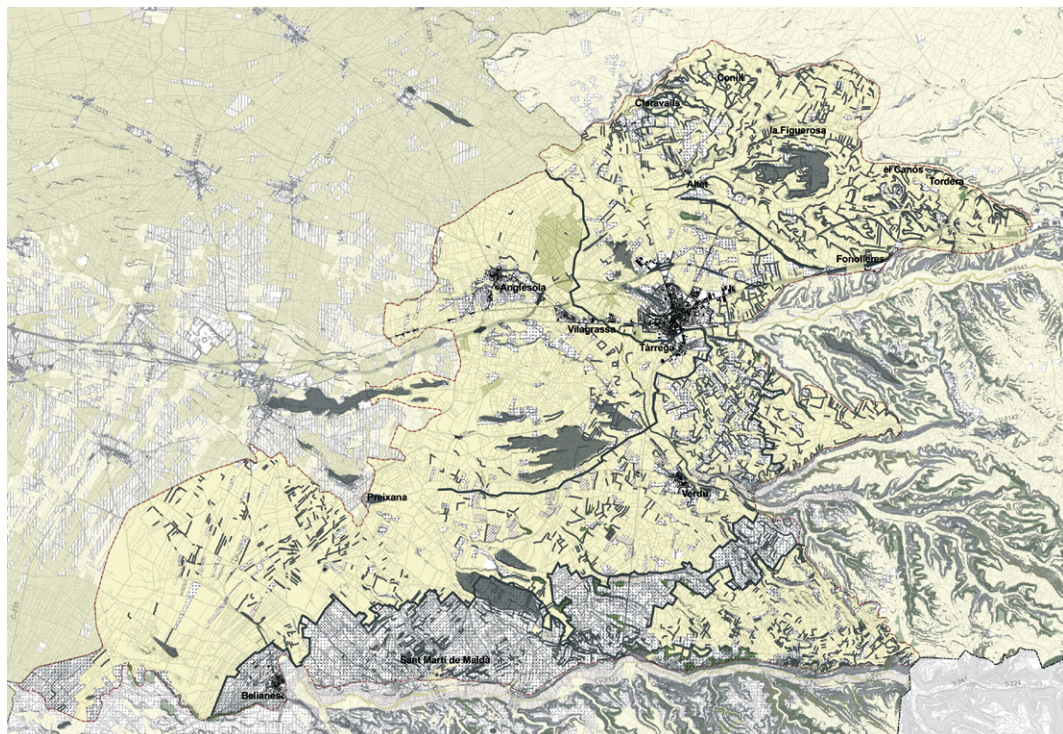


FIGURE 11 Spatial patterns of containment: limits as possible nodes of perceptual attraction.



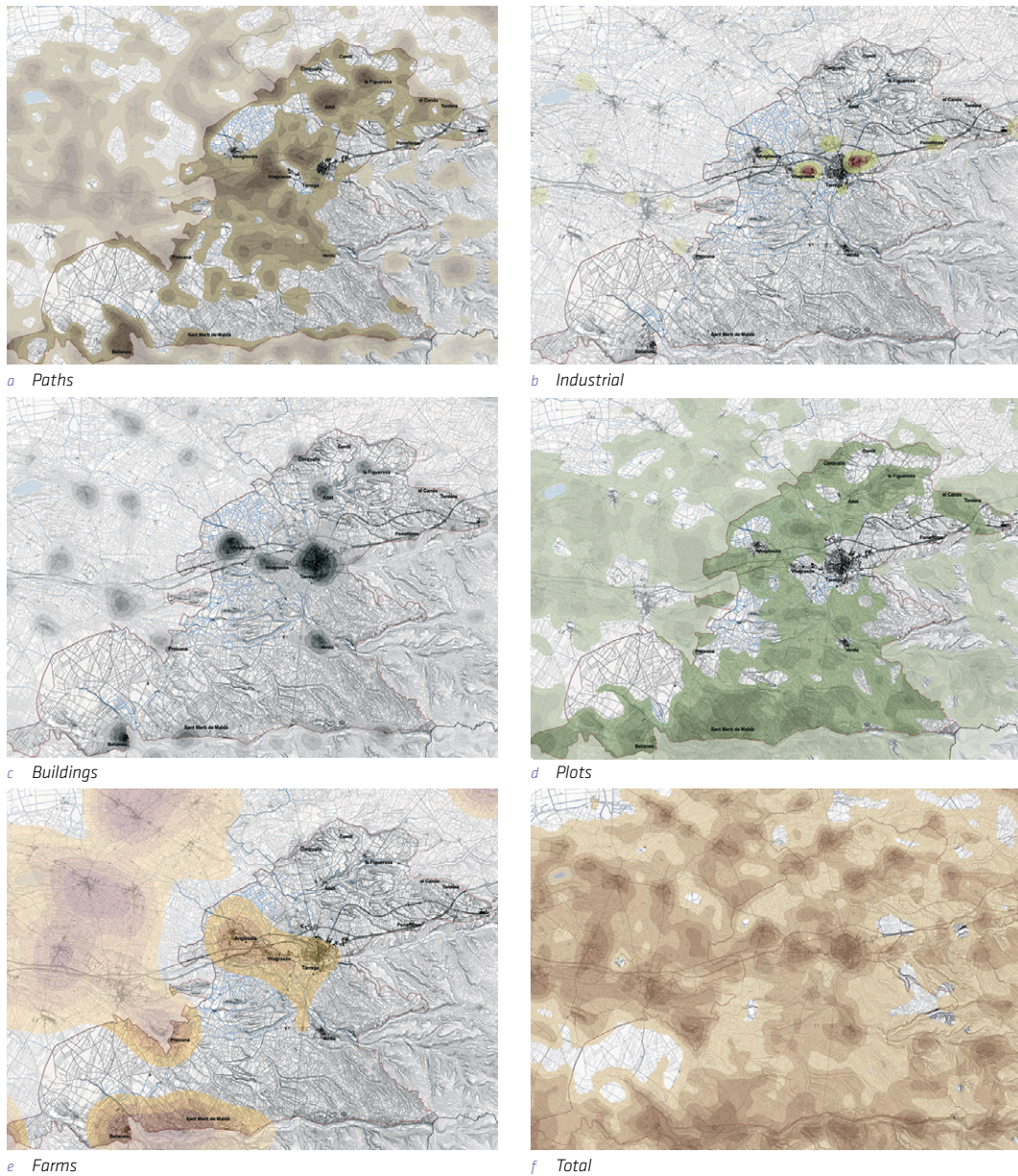


FIGURE 12 Spatial distribution and tendency of concentration of the main elements that configure this landscape: paths, plots and buildings. doi:10.7480/spool.2016.1.1101.g1495

## From discrete to dense mapping

However suggestive any one of these cartographic insights on its own might be, the cartographic approach to the activators of atmosphere can only make sense through the patterns of relations configured between them, as in the moment of their embodied experience. This crossing (Fig. 14), proposes a synthetic interpretation of this landscape concretized not in the form of discrete elements but through the manner that spatial patterns formed among elements of distinctive morphological configuration situate the body



within them. The cartography slides towards a type of dense notation, where the meaning of each variable depends both on its precise form and on the spatial relations established with the rest of the elements, forming fields of variable densities (Fig. 15). This cartographic interpretation can hardly stand for a “global”, unique pattern of atmosphere throughout the site: In a certain manner, the interpretation of atmosphere returns the attention to the perception as situated in a specific atmospheric nest, without implying a static understanding of the landscape.

This passage from discrete to dense representation points to an interpretation of the landscape through overlapping atmospheric nests that maintain their integrity while participating in multiple narratives spatially distributed in a virtual synchrony throughout the landscape. Although each nest could be analyzed in depth as a unique landscape pattern, the particularity, and consequently the understanding, of its value is enhanced through the relationship with its surrounding patterns. If, at this point, we were to define the sense of understanding of the particular that this mapping puts forward, at this scale of work, this would rely precisely on the characterization of the landscape as patterns of relations between distinct atmospheric niches. Value, on the other hand, can be assigned in terms of the quality of the potential narratives configured through the embodied, dynamic, sequential experience of these patterns. Moreover, a specific, intentionally designed sequence could add value to this landscape.

This analysis definitely questions the understanding of landscape as surface that can be divided into sharply defined sub-surfaces, or units more able to carry certain meanings or functional uses rather than others. On the contrary, it points to the proper meaning of landscape analysis as a vehicle for assessing how the territory can be transformed to re-orchestrate meanings and atmospheric intensities without sacrificing its specificity. In addition, this specificity cannot be revealed if we do not look into the complexity of the patterns of relations that form the structure of the landscape (Fig. 16).



FIGURE 13 Cartographical interpretation of the perceived complexity through geometry.





FIGURE 14 Synthetic interpretation of the crossing between the cartographical interpretation of the activators of atmosphere.  
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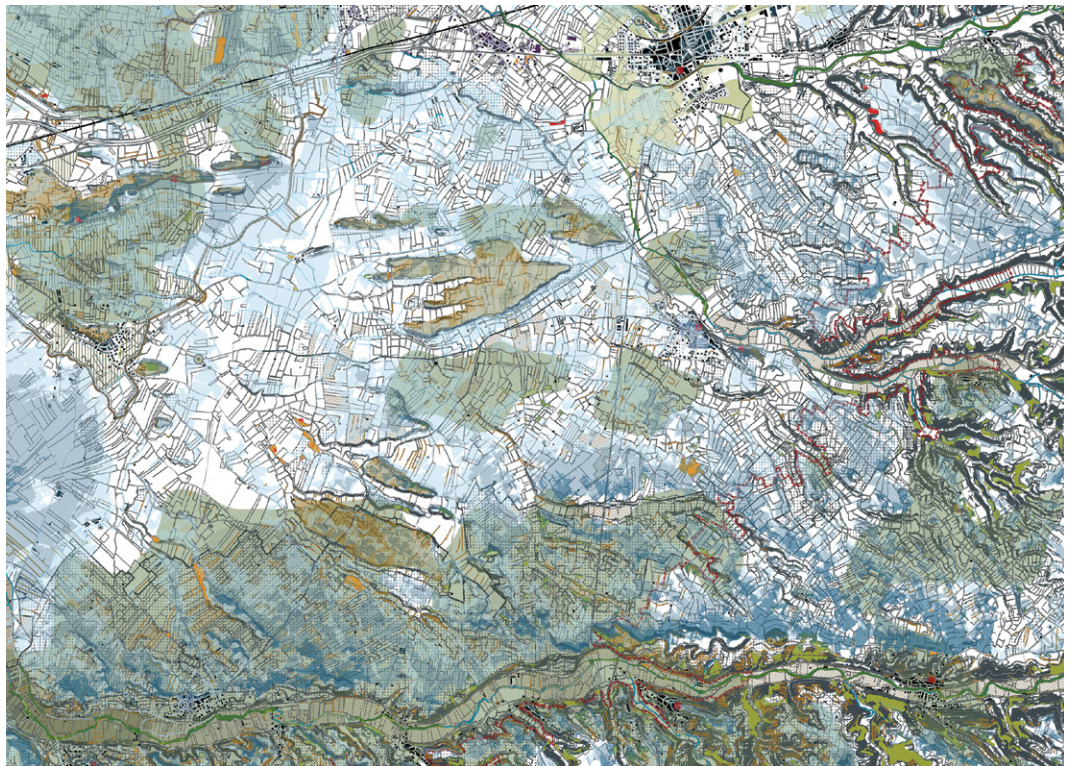


FIGURE 15 Fields of variable densities of spatial relations between elements.



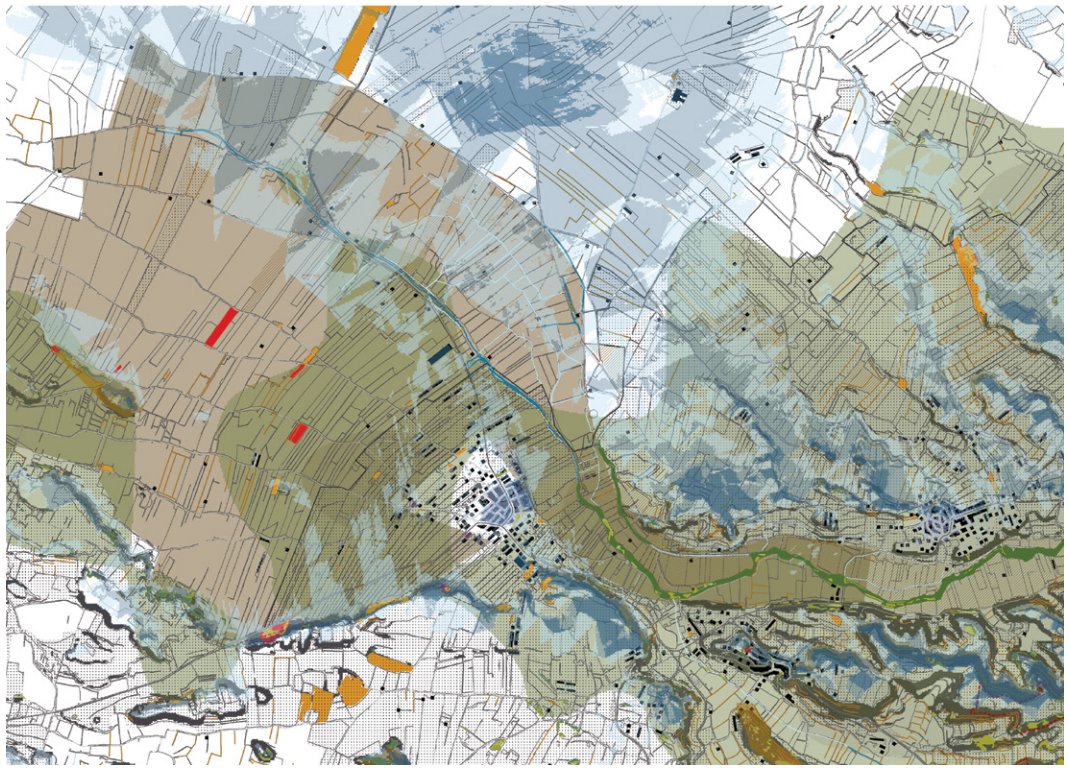


FIGURE 16 Densities as differentiated patterns of relations.

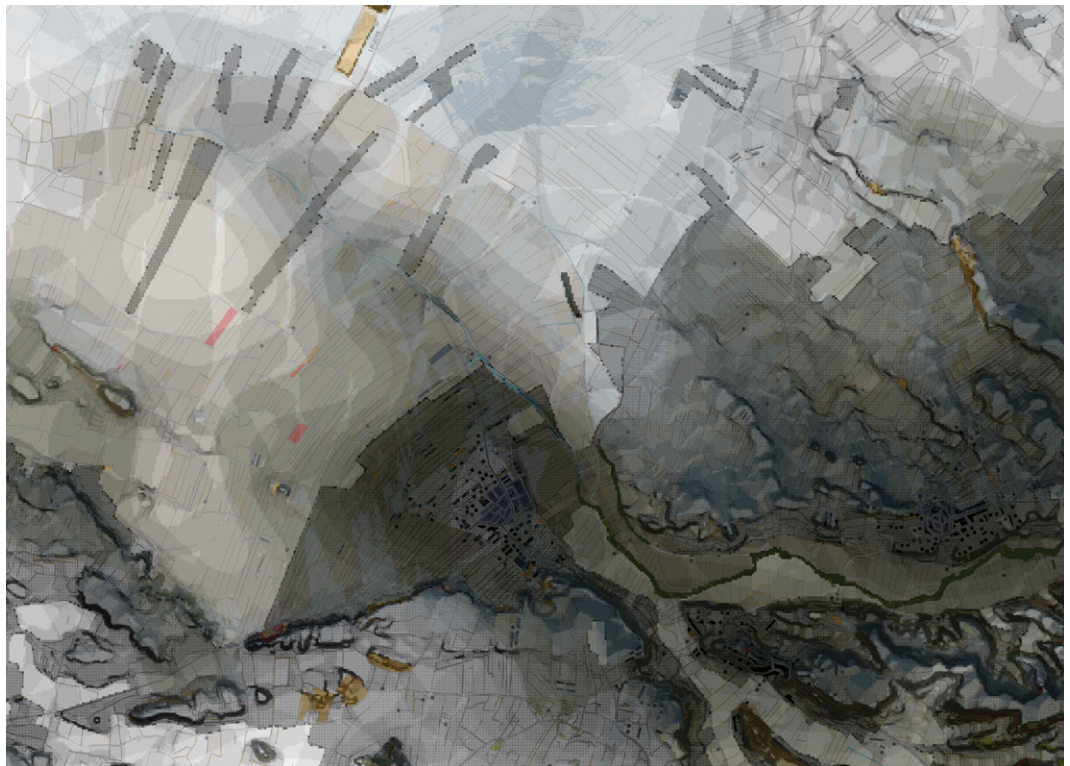


FIGURE 17 Idem.



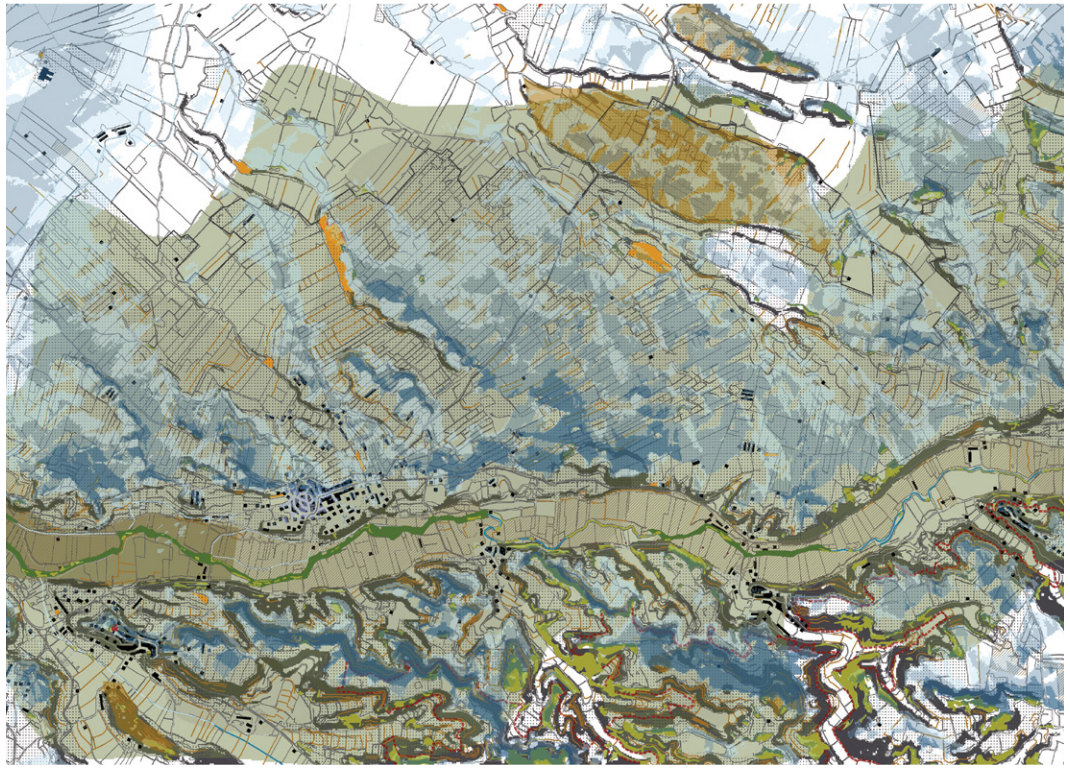


FIGURE 18 Examples of the result of crossing of different scales (here: 1:50.000) and manual mapping

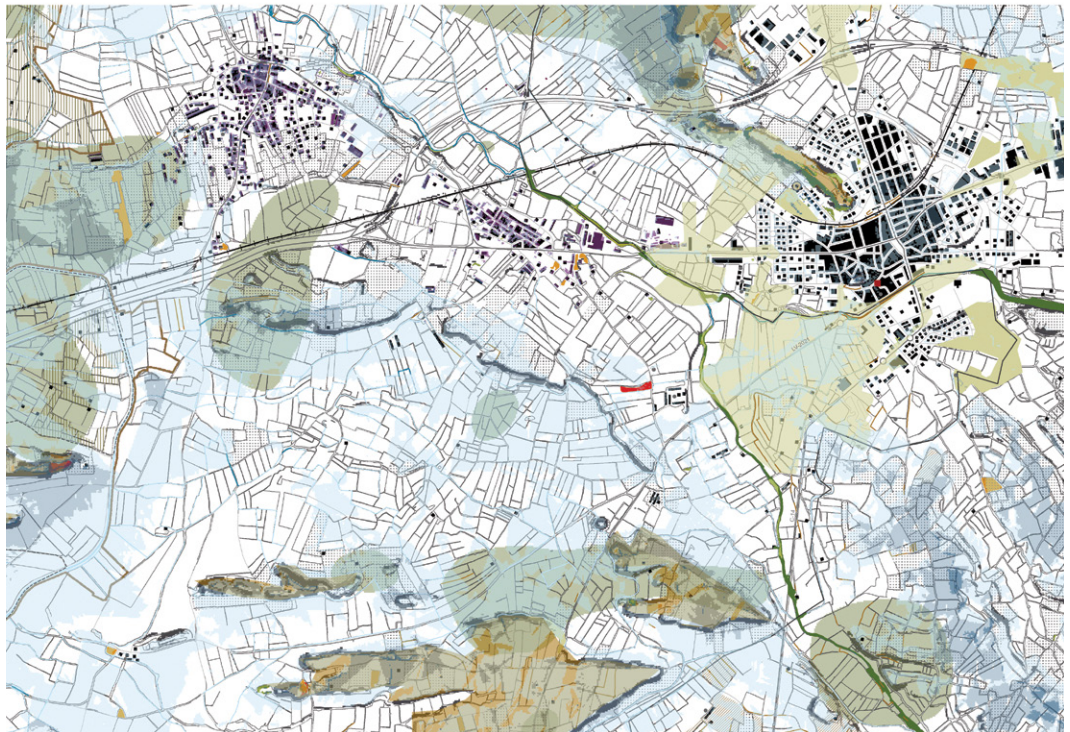


FIGURE 19 Examples of the result of crossing of different scales (here: 1:5.000) and manual mapping

Distinctiveness thus is based not only on the discreteness of the landscape elements, but also on the multiple densities formed by the interaction between elements as perceived through their embodied experience (Fig. 17). Densities, representing differentiated atmospheres, not only help us move beyond the idea of a clearly distinguishable landscape unit, but also beyond the idea of difference, electiveness and singularity as criteria for value: All landscapes have atmosphere, although they differ in the manner that they do so. Certain collections of distinct intensities can be localized and identified geographically (Fig. 17). Patterns seem to have a structure that is denser in certain areas and seemingly looser in others. Does this mean that the atmosphere in these areas of low density is experienced by the body as faded or loose?

Density must not be confused with the intensity of the experience. High density though could be interpreted as an indicator of an increased perceived complexity, based on the interaction of multiple landscape elements. On the other hand, low density could be linked with a higher grade of legibility. Nonetheless, this mapping does not directly reflect more or less valuable types of landscape units. Rather, it interprets some specific qualities of this landscape, based precisely on the relations configured between “atmospheric” densities, interrelated into a collage of multiple sequences of nesting patterns of atmosphere.

## From scale to precision

In this interpretation of the landscape, the scale of the cartography interprets both the specificity of the form of the landscape elements with the necessary precision in order to reveal its significance to the embodied experience and the specificity of the spatial relations established between elements. By crossing data from databases of disparate scales (Fig. 18, 19), mapping data manually, these mappings seem to move beyond the typical cartographical constraints of precision in the scale of the territory towards the necessary precision in order to interpret the embodied experience of the landscape.

The mappings point towards an inter-scale approach, integrating two scales that are traditionally detached; the scale of the body and the scale of the territory, offering at least an alternative perspective to the traditional multi-scale approach. In the latter, the understanding of the landscape seems to follow a typical route: from big to small and vice versa, submitting the precision of the cartography to the “size” of the territory analyzed. Consequently, in the scale of the territory, the characterization of the values tends towards descriptions of landscape types that most probably provide generic descriptions of landscape character.

The projection of the embodied in the cartography on the other hand enhances an extended sense of the morphological analysis, landing the analytical eye on the perceptual ground of the landscape. Through this process, the cartography specifies, at local level, generic descriptions of the landscape that are inherently abstract and potentially trans-spatial: This dry-fed agricultural plain certainly shares various common elements with any other agricultural plain situated at similar geographic and atmospheric conditions. Nonetheless, its specificity is interpreted through the manner that the morphological attributes of these elements are concretized and interrelated on a particular site, as perceived through the embodied experience.

# Conclusions

Cartographic exercises are more valuable for the arguments they endeavor to activate than for their finality as cartographic products in themselves. They are partial and selective, highlighting certain qualities of the landscape while overshadowing others, proposing a specific understanding of the particular:

The analytic attention balances between the quality of singular landscape elements and the relations configured among differentiated patterns of atmosphere. Affordances, spatial patterns of containment, and perceived complexity are proposed as complex variables to be interpreted through the cartography. This leads to the identification of potential nodes of activation of the perception and variable degrees of complexity and legibility of the landscape indicating the presence of particular places, inviting for their further characterization. In this process of approaching the particular at a scale of work that pretends to link landscape analysis with spatial planning, the mappings of atmosphere thus pave the way for the identification of intense experiential narratives, present or latent, to be configured through design, although not definitely delimiting precise units of distinct value.

Furthermore, by tracing associations between the body and the territory, they propose an enrichment of the morphological analysis of the landscape: In a way, the mappings of atmosphere, based on the processing of common cartographic data and tools, specify through a two dimensional representation understandings retrieved through the embodied experience of the site, driving cartography towards a more situated, experiential reading of the landscape.

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## Notes

- [1] This approach to cartography forms no exception to the prevailing tendency towards “objective” approaches to spatial analysis, inherited from modernist thinking and still profoundly influencing our understanding of space. Although postmodern critique traces the possibilities of alternative theoretical positions, advocating for more qualitative site-specific approaches (Harley, 1989), the fact is that there is a lack of corresponding methodological tools of spatial analysis and design.



- [2] In *Genius Loci: Towards a Phenomenology of Architecture* (1980), NorbergSchulz defines atmosphere as the manifestation of the character of place, where place stands for: "a totality made up of concrete things having material substance, shape, texture and colour. Together these things determine an 'environmental character' - or atmosphere - which is the essence of place." (Norberg Schulz, 1980:8).
- [3] The author has participated, as member of the team of CRPPb (Centre of Landscape Research and Design of Barcelona integrated in the Department of Urbanism and Urban Planning, School of Architecture, Polytechnic University of Catalonia) in the drawing up of the Landscape Catalogue of Lerida.
- [4] Werner Nohl (2001) proposes "the plain" as a new category of landscape aesthetics, considering the contemporary dynamics influencing agricultural landscapes:  
Looking at the areas of intensive agricultural production and other modern land uses, which will characterize large parts of our landscape in the future, it might be useful to point to a fourth aesthetic category, relevant to landscape perception. In the following, the aesthetic quality of such areas will be called the "plain". Today, these areas belong to the aesthetically most unattractive landscapes....  
In sum: plainness is a new visual experience, which is still waiting to be realized. (Nohl 2001:233)
- [5] As far as the databases used for the elaboration of the cartography are concerned, apart from the 5.000 scale topographic layer and planimetric map, we would like to highlight the importance of the layer of the habitats (50,000 scale). Although the term habitat refers mainly to an ecological function, it potentially offers accurate information about the quality of the morphological properties of the landscape. Furthermore, the linkage between atmospheric qualities derived from the morphological configuration of the habitats and the ecological perspective is of doubtless methodological interest. In terms of the software applied, the cartographic essays assume GIS for reinforcing a methodological process potentially shared through a commonly used cartography tool in the field of landscape architecture.

